
Ergonomics

An Army Industrial Hygienist's Corporate Perspective

Lindsey Kneten

Overview

- Identify the 8-steps of the DoD Exposure Assessment Model that the DOEHRS-IH system is built upon
- Review Basic Ergonomics functionality in DOEHRS
- Review Ergonomics Data Captured in DOEHRS
- Future initiatives

DOD Exposure Assessment Model

Business Process Model of DOEHRS-IH

- Define Scope of Support & Resources
- Basic Characterization
- Establish Similar Exposure Groups
- Develop Workplace Monitoring Plan
- Characterize Exposures
- Assess Exposure & Recommend Control
- Reporting
- Re-evaluation

Defense Occupational Environmental Health Readiness System (DOEHRS)

- Tri Service web-based Occupational and Environmental Health (OEH) exposure database system
- Collection and analysis platform to generate a longitudinal OEH exposure record for Service Members and Civilians

Identifying Ergonomic Hazards

Shop Name: PS DENTAC FM82DENTAL+ Process Name: DENTAL GENERAL+

Potential Ergonomics Hazard Information

Potential Ergonomics Hazard *
(If uncertain, click the Answer Potential
Ergonomic Hazard Questions icon for guidance)

No



Save

DOD Ergonomics Work Group
wanted a reminder for Industrial
Hygienist to consider ergonomics in
every captured process

Washington State Questions

Hazards - Potential Ergonomic Hazard [Help](#)

Answering Yes to any of the following questions indicates a potential Ergonomic Hazard.

Ergonomics Information			
Graphic Example	Question	Answer	
		Yes	No
	Does the task include performance of the same motion or motion pattern every few seconds for more than a total of 2 hours/day?	<input type="radio"/>	<input type="radio"/>
	Does the task include a fixed or awkward work posture (e.g., overhead work, twisted or bent back, bent wrist, kneeling, stooping, squatting) for more than a total of 2 hours/day?	<input type="radio"/>	<input type="radio"/>
	Does the task include Exposure to localized or whole body vibration (e.g., the use of vibrating or impact tools or equipment) for more than a total of 2 hours/day?	<input type="radio"/>	<input type="radio"/>
	Does the task include forceful hand exertions for more than a total of 2 hours/day?	<input type="radio"/>	<input type="radio"/>
	Does the task include unassisted frequent or forceful manual handling for more than a total of 2 hours/day?	<input type="radio"/>	<input type="radio"/>
	Have there been any employees or service members with work-related musculoskeletal disorders in the same or similar jobs recorded?	<input type="radio"/>	<input type="radio"/>

Ergonomics hazards provided by DOD Ergonomics Working Group

Find Hazard Result

Select a hazard to add to the form.

Search

Hazard Search Results

Select	Hazard Name	Synonym	CAS #
<input type="radio"/>	Cold Surfaces		
<input type="radio"/>	Contact Stress		
<input type="radio"/>	Dynamic Posture		
<input type="radio"/>	Energy Expenditure		
<input type="radio"/>	Forceful Exertion		
<input type="radio"/>	Glare		
<input type="radio"/>	Impact/Jolt		
<input type="radio"/>	Lighting Level		
<input type="radio"/>	Psychosocial		
<input type="radio"/>	Segmental/Hand - Arm Vibration		
<input type="radio"/>	Static Posture		
<input type="radio"/>	Visual Demand		
<input type="radio"/>	Whole Body Vibration		
<input type="radio"/>	Work Rate/Repetition		

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Ergonomics Data via Oracle Discoverer

Ft. Eustis IHPO Report
Shop => Process => Method => Hazards

	Organization Name	Shop Name	Process Name	Common Process	Method	Hazard Name
1	DU9 USAALS CELL FT EUSTIS	FE2716A	EQUIP REPAIR/PM	Equipment Repair/Prev. Maintenance	Equipment repair/prev. maint., NOC	AROMATIC NAPHTHA
2						Propionic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol
3						VINYL TOLUENE

Army Personnel Requiring Audiometric Testing by Sampling Results Greater Than or Equal to 85 dBA

	Ihpo Id	Ihpo Name	Twa Value	Sample Date	Twa Id	Personnel Id	Worker Name
1	621	DE, Grafenwoehr	85	29-NOV-2006	1369	836940	[REDACTED]
2			85	29-MAR-2007	1310	437622	[REDACTED]
3			86	14-MAR-2007	1312	340896	[REDACTED]
4			89	28-MAR-2007	1308	436778	[REDACTED]

SEGs Recommended for Audiometric Testing , Vision Conservation, Respirator User Certification Program Exam

Table

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* Rows * Columns
(1 - 999) (1 - 999)

Page Items Agency Name Ihpo Name Med Surv Program

Up Down

Rows 1-25 of 152

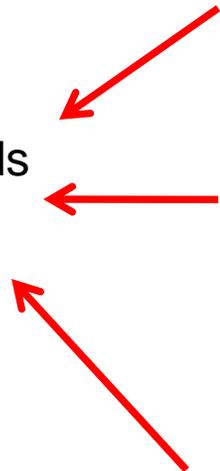
Agency Id Ihpo Id Seg Name Responsible Ih Last Name First Name Dod Edi Pn Id Med Surv Program Id

	Agency Id	Ihpo Id	Seg Name	Responsible Ih	Last Name	First Name	Dod Edi Pn Id	Med Surv Program Id
1	2	236	DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1228513101	94
2			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1183540161	
3			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1155513477	
4			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1229431940	
5			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1163824171	
6			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1231559600	
7			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1058841958	
8			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1231710252	
9			DOL IMD Class IX Welding	40	[REDACTED]	[REDACTED]	1184355414	

Top 20 Army Hazards in DOEHRS

Hazard Name	Calculation13
NOISE	59763.00
EYE HAZARDS	46292.00
FOOT HAZARDS	33759.00
Forceful Exertion	31223.00
FLYING PROJECTILES	20984.00
OIL MISTS, MINERAL	17879.00
CARBON MONOXIDE	17678.00
Visual Demand	14712.00
SHARP OBJECTS (CUTS)	13826.00
LEAD AND INORGANIC COMPOUNDS AS PB	10661.00
HOT OBJECTS (BURNS)	10516.00
DIESEL FUEL (AS TOTAL HYDROCARBONS)	9900.00
ELECTRIC SHOCK	9608.00
Lighting Level	9542.00
NUISANCE PARTICULATES, TOTAL DUST	8921.00
STODDARD SOLVENT	8468.00
TOLUENE	7911.00
GASOLINE	7808.00
XYLENE	7744.00
FLAMMABLE/EXPLOSIVE	7170.00

Ergonomic Hazards
In the List



Where Ergo Hazards Rank

▶ Hazard Name	▶ Ergo Hazard Counts
<u>Forceful Exertion</u>	31224.00
Visual Demand	14712.00
Lighting Level	9542.00
Contact Stress	4396.00
Static Posture	4009.00
Work Rate/Repetition	3917.00
Segmental/Hand - Arm Vibration	2849.00
Energy Expenditure	1906.00
Whole Body Vibration	1829.00
Impact/Jolt	846.00
Glare	690.00
Psychosocial	663.00
Cold Surfaces	476.00

Count of Personnel with Identified Potential Exposure

▶ Hazard Name	▶ Personnel Ergo Count
Forceful Exertion	<u>123342.00</u>
Visual Demand	53270.00
Lighting Level	34921.00
Static Posture	22171.00
Work Rate/Repetition	21729.00
Whole Body Vibration	12874.00
Segmental/Hand - Arm Vibration	11944.00
Contact Stress	11689.00
Energy Expenditure	9321.00
Psychosocial	6222.00
Impact/Jolt	5860.00
Cold Surfaces	4606.00
Glare	3913.00

Breakout by Occupational Code Segmental Hand/Arm Vibration

How does the Potential Hazard relate to Reported Injuries

▶ Occupation Code	▶ Service Component Code	▶ Pay Plan Code	▶ Occupation Code Count
91B1000	A	ME	5997.00
2A773	F	ME	5994.00
2A753	F	ME	5924.00
91B1P00	A	ME	3023.00
2A571	F		426.00
2A551	F		390.00
2A652	F		233.00
91B2000	A		143.00
91B2P00	A		949.00
2A672	F		904.00
38006	F		787.00
2W051	F		767.00
2A671	F	ME	1739.00
58003	A	WVG	1706.00

		
Wheeled Vehicle Mechanic (91B)		

Forceful Exertion

Process Category	Common Process	Method	Counts
Industrial	Storage of Materials	Storage of materials, NOC	4507
Industrial	Equipment Repair/Prev. Maintenance	Preventive maintenance	1455
Industrial	Equipment Repair/Prev. Maintenance	Equipment assembly/disassembly	970
Industrial	NOC	NOC	963
Industrial	Supplies/Materials Handling	Loading/unloading	904
Industrial	Vehicle Maintenance	Vehicle testing/tuning	835
Administrative	Administrative	Administrative, NOC	751
Industrial	Miscellaneous Operations	Miscellaneous, multiple operations	681
Industrial	Laboratory Operations	Research and development, NOC	659
Industrial	Supplies/Materials Handling	Forklift operation	552
Industrial	Medical	Medical, general or operations	489
Industrial	Metal Machining	Metal machining, NOC	473
Industrial	Equipment Repair/Prev. Maintenance	Equipment repair/prev. maint., NOC	453
Industrial	Electrical/Electronics	Electrical parts repair	451
Industrial	Brazing/Soldering/Welding/Cutting	Welding, NOC	378
Industrial	Food Preparation/Handling	Food preparation and handling	333
Industrial	Electrical/Electronics	Electrical, battery charging	332
Industrial	Equipment Repair/Prev. Maintenance	NOC, brake/gearbox/clutch work	331
Industrial	Woodworking	Woodworking, multiple operations	328
Industrial	Vehicle Maintenance	Vehicle repair, multiple operations	320
Industrial	Supplies/Materials Handling	Tool and parts issue	305

Ergonomic Assessments

Ergo Process Task Information											
Delete											
Select	Task	Lifting/Exertion	Task Frequency	Task Rating	Checklist	Body Region Scores					
						Shoulder/Neck	Hand/Wrist/Arm	Back/Torso	Legs/Feet	Head/Eyes	Highest Score
<input type="checkbox"/>	Visual Inspection	No	Medium	Medium	View/Edit	Low	Medium	High	Low	Low	Back/Torso 9.0
<input type="checkbox"/>	Assembling/Repairing- bench work	Yes	Medium	Medium	View/Edit	Low	Medium	High	Low	Low	Back/Torso 9.0
<input type="checkbox"/>	Bolting/Screwing	No	Low	Low	N/A						
Delete											
Employee Suggestion Information											
Findings Information											
Rating Summary Information											
Legs/Feet		Low	Head/Eyes				Low				
Shoulder/Neck		Low	Hand/Wrist/Arm				Medium				
Back/Torso		High	Body Region with Highest Priority Score				Back/Torso				
Overall Priority Rating		High									

What Do the Scores Mean

- Once the checklists have been completed, an assessment may have been done.
- What can be done to improve the Ergonomic issues of the worker(s) based on scores?

Future Initiatives

- Identify IH Program Offices that do not identify Ergonomic Hazards
 - Educate them on importance
- Evaluate the tasks where Ergonomic Hazards have been identified
- Develop better tools to evaluate the Ergonomic Hazards

Questions



Lindsey Kneten

Army Functional Representative DOEHRS-IH
US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL)

Industrial Hygiene Field Services